

Piano Tutor Application Manual

1. Introduction

Welcome to Piano Tutor! This application is designed to help you learn and practice piano pieces. You can load your own digital sheet music in MusicXML format, and the application provides interactive feedback as you play on a connected MIDI keyboard. Additionally, you can play back the music, adjust the tempo, and isolate specific sections for practice.

2. First Use: Setting up MIDI Devices

Before you can begin, you must configure your MIDI devices.

1. **MIDI Input:** Select your digital piano or MIDI keyboard from the dropdown list next to "MIDI Input:". This allows the application to recognize the notes you play.
 2. **MIDI Output:** Select an output device from the dropdown list next to "MIDI Output:". This can be a software synthesizer (like the "Microsoft GS Wavetable Synth" that comes standard with Windows) or another external MIDI device. This is used to play back the music and to make the notes you play audible (MIDI Thru).
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3. The User Interface

The main window is divided into three main parts: the menu, the control panel, and the score view.



3.1. Menu Bar

- **File:**
 - **Open MusicXML...:** Opens a window where you can select a `.musicxml` or `.xml` file to load into the application.
 - **Exit:** Closes the application.
- **Help:**
 - **About Piano Tutor...:** Displays a window with information about the application.

3.2. Control Panel

Here you will find all the buttons and sliders to control the application.

- **MIDI Dropdowns:** As described in section 2, for selecting your input and output devices.
- **Show note names:** Check this box to display the name of the note (e.g., C, D#, E) on the score at the moment you play it on your keyboard.

- **Spacing Slider:** Adjusts the horizontal distance between the notes on the score. Slide to the right for more space and to the left for a more compact view. The percentage is shown next to the slider.
- **Speed Slider:** Adjusts the playback speed when using the playback function. 100% is the tempo as indicated in the score.
-  **Play Button:** Starts the music playback. If a section is selected, only that section will be played.
-  **Stop Button:** Stops the playback. This button is only active during playback.

3.3. Score View

This is the large white area (`Canvas`) where the sheet music is drawn.

- **Navigating:** You can scroll horizontally to navigate through the entire piece.
- **Zooming:** Hold down the `Ctrl` key and use the mouse wheel to zoom in and out on the score.

4. Practice Mode

The core functionality of Piano Tutor is the interactive practice mode.

4.1. Playing Notes

Once a score is loaded and your MIDI keyboard is connected, you can start playing. A red vertical line, the **cursor**, indicates which notes you should be playing at that moment.

- **Correct Note:** If you play the correct note (or chord), the note heads turn **green**, and the cursor advances to the next point in time.
- **Wrong Note:** If you play a wrong note, the expected (correct) note heads will temporarily turn **red** to point out the mistake. The cursor will stay in place until the correct notes are played.



4.2. Practicing a Section (Practice Loop)

If you want to practice a specific part of the music piece, you can select it.

1. **Click and drag** with the mouse over the notes you want to practice. A blue rectangle will appear.
2. Release the mouse button. The notes within the selection will now be colored **blue**.
3. The practice mode will now be limited to this selection. After you correctly play the last note of the selection, the cursor will jump back to the beginning of the selection, allowing you to repeat it endlessly.
4. To clear the selection, simply click anywhere on the score without dragging. All notes will turn black again, and the practice mode will once again apply to the entire piece.

5. Playback Function

The playback function allows you to listen to the music piece.

1. Select a MIDI output device.
2. If desired, adjust the speed with the **Speed Slider**.
3. Click the  **Play** button. The application will play the score (or your selection), with the cursor following along with the music.
4. Click the  **Stop** button to stop the playback.